Elite Ecology

Passionate about Ecology

Dower House,

Harlington

Bat Activity Survey

August 2023

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0. Executive Summary

0.1 This report has been prepared at the request of Mr. Michael Edwards (Komfort Services). It relates to the potential presence of bats and birds proposed re-development works at Dower House, High Street, Harlington, Bedfordshire, UB3 5DH (OS Grid Reference: TQ 08846 77323). This survey effort involved both a desktop study and field survey being undertaken.

0.2 Under the current proposals, thirteen additional residential dwellings with new access and community woodland. This will result in both the permanent and temporary loss and/or alteration of some of the habitats located on the proposed re-development site.

0.3 Due to the amount of potential ingress/egress points and suitable roosting features, the buildings were deemed to be of the following bat roosting potential:

- **B1 = moderate**
- **B2 = low**
- **B3 = low**

Therefore, further bat activity surveys were required during the bat survey season (May to September, inclusive). These were subsequently undertaken in June, July, and August 2023.

The building **B1** was **confirmed** to support nesting birds.

0.4 **Summary**

Bat Presence/Absence

From the survey visit undertaken on the site, it can be concluded that the structure **B1** contains a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats. **B2** and **B3** were not found to support roosts of any type. In addition to this, commuting and foraging common pipistrelle (*Pipistrellus pipistrellus*) and noctule (*Nyctalus noctula*) bats are present in the local landscape.

Bird Presence/Absence

From the survey visit undertaken on the site, it can be concluded that the surveyed structures contain nesting birds. In addition, the surrounding landscape provides all of the necessary habitat elements that birds require.

Ecological Value of Building Units

The ecological value of the structure has been deemed as **high** to bats due to the presence of a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats.

The ecological value of the buildings to birds has been deemed **high** due to **B1** supporting nests of blackbird (*Turdus merula*).

0.5 **Recommendations**

The recommendations for Dower House, Harlington can be summarised as follows (please refer to **Section 5 – Recommendations** for a more in-depth description):

- Apply for a Natural England Development Licence to legally carry out the works.
- No re-development works can proceed on the structure until October when the bats have gone to their hibernation roosts.
- At the start of works, site supervision by a licenced bat ecologist in accordance with the Natural England Development Licence will be required.
- Install bat compensatory features on the site in accordance with **Section 5 Recommendations**.
- Artificial lighting should be avoided around compensatory roosting features.
- No breathable roofing membrane is to be used on the structure.
- No works can be undertaken during the bird breeding season of March to August (inclusive), unless the structure has been inspected by a suitably qualified ecologist no more than twenty-four hours prior to the commencement of works.
- Incorporate Bird Boxes, such as an FSC Blackbird Nest Box into the proposed scheme of works to compensate for the loss of blackbird (*Turdus merula*) nests.
- **Optional:** Install a variety of bird boxes around the site post development to enhance the site for the local bird populations. Some suitable examples are shown in **Section 5**.

Contents

1. Introduction

1.1 Report Rationale

This report has been prepared at the request of Mr. Michael Edwards (Komfort Services). It relates to the potential presence of bats and birds proposed re-development works at Dower House, High Street, Harlington, Bedfordshire, UB3 5DH (OS Grid Reference: TQ 08846 77323). This survey effort involved both a desktop study and field survey being undertaken.

1.2 Site Description

The site is located within in an urban setting in the village of Harlington, found within the London Borough of Hillingdon. The site measures approximately 0.7ha and contains a number of habitats. The buildings of interest themselves measure a total of approximately 470m^2. The habitats include broadleaved scattered trees, buildings, coniferous scattered trees, fence, hard standing ground, other habitat (waste piles), recently felled broadleaved trees, scattered scrub, short ephemeral, tall ruderal, and wall. The habitats on site could have the potential to support a number of protected species. The photographs of the site are found within **Appendix D**.

Figure 1: An aerial photograph of the surveyed site at Dower House, Harlington (as shown by the red outline). The arbitrary building numbers referred to throughout this report are also illustrated.

1.3 Proposed Works

Under the current proposals, the plans are to rebuild the listed building, and create thirteen additional residential dwellings with new access and community woodland. This will result in both the permanent and temporary loss and/or alteration of some of the habitats located on the proposed re-development site.

1.4 Aims of Surveys

The aims of the surveys were to undertake an assessment of the building(s), vegetation and surrounding area to establish whether any bats may be present and, if so, in what way they are using the site. The actions of the surveyors on the site and during the production of this report were conducted in accordance with Bat Conservation Trust (BCT) guidelines (3rd edition).

1.4.1 This survey effort considered the potential for all **bat and bird species (including barn owls)** onsite:

- To establish the possibility of bat roosts and bird nests being present at the proposed development site.
- To assess any roost/nest status (i.e. what type and numbers of individuals).
- To assess suitable food, resources and habitat requirements on site and in the local landscape.

1.4.2 The information will subsequently be used in conjunction with the knowledge of the proposed works at the site to determine the potential need for further survey effort, the impacts of the proposed scheme of works, to establish whether a Natural England Development Licence is required along with species-specific mitigation and compensation. This is done in order to keep any protected species at a favourable conservation status on site.

2. Survey Methodology

2.1 Desktop Survey Methodology

2.1.1 A variety of resources were independently consulted to assess the known local records within the nearby area and the importance of the site within the local landscape from an ecological perspective. The resources used were the Local Records Centre, www.naturalengland.org.uk, www.ordnancesurvey.co.uk, Google Maps, Google Earth, and Bing Maps. A search of other relevant nature conservation information was made through the use of the Multi-Agency Geographic Information for the Countryside (MAGIC) database.

2.1.2 The local records centre was contacted to provide data on all bat and bird species within 1km of the proposed development site. Greenspace Information for Greater London (GiGL) were the relevant local record centre for this project.

2.2 Field Survey Methodology

2.2.1 Initial Site Survey

This is done by assessing the site by visually inspecting all building/s/structures and any trees/vegetation to be impacted by the proposed works. This is done to assess the resource availability for protected species on site and in the immediate area. Particular reference is made to:

- The presence or absence of bats and birds onsite.
- Any evidence of potential bat roosts and bird nests onsite.
- Whether any additional survey effort will be required.

During the initial survey, an internal and external inspection of the building(s) is undertaken to look for signs of bat activity. This is done in accordance with BCT guidelines for the assessment of building(s) and built structures.

2.2.2 External Inspection

This survey method is used to locate potential ingress and egress points around the structures that both bats and birds could use to gain access into the building. It also aims to identify any areas where cracks and crevices are present to be used as roosting/nesting features. This visual inspection is carried out in full daylight using binoculars, endoscopes, torches, and ladders. This will allow for the determination of the following information:

- The type of building(s) surveyed.
- The approximate age of building(s) surveyed.
- The construction type and materials used.
- The presence of potential roost features (e.g. missing roof tiles, raised ridge tiles, air vents, cracks and crevices within the mortar).
- The presence of suitable ingress and egress points (e.g. missing windows and doors, missing mortar, lifted tiles).
- The location of any anecdotal evidence for the presence of protected species (e.g. nests, droppings or food remains).

2.2.3 **Internal Inspection**

This survey method aims to locate and examine areas which potentially provide suitable environmental conditions for bats. This visual inspection was undertaken by using binoculars, endoscopes, torches, ladders, and bat detectors to inspect internal features of the building(s).

This will allow for the determination of the following information:

- The presence of warm areas, dark areas, joints, crevices, beams, and cavities that could be used for roosting and nesting purposes by bats and birds.
- To locate possible bat roost and bird nest sites.
- To listen for social calling bats.
- To locate any evidence of bat and bird presence through the identification of live or dead specimens, grease marks, droppings, food remnants, urine stains, and/or the characteristic smell of bats.

2.2.4 **Building/Vegetation Classification**

A building/vegetation classification will be assigned to each surveyed feature that is proposed to be impacted by the scheme of works. This classification is based on the features potential to support roosting bats. The rating is also influenced by the location of the structure(s) in the local landscape, along with the number of suitable alternative roosting features, the type of features present in the landscape and the surveyor's experience. For example:

A structure that has a high level of anthropogenic disturbance with limited opportunities for access by bats, that is also situated within an urbanised area with few, or no mature trees, parkland, woodland, or wetland would generally equate to having **negligible/low** potential.

Conversely, an older structure (e.g. pre 20th century or early 20th century) with multiple features suitable for use by bats that is close to optimal foraging habitat would equate to having **high** potential.

The amount of additional survey effort required for each feature will depend on its rating:

- **Negligible** – No further survey effort is required.
- **Low** – One further activity survey is required (structures only).
- **Moderate** – Two further activity surveys are required.
- **High** – Three further activity surveys are required.

2.2.5 **Roost Categories**

Any structures with evidence of bats will be further evaluated to assess which of the following roost categories may be present onsite:

- **Day Roost:**

  A place where individual bats, or small groups of males, rest or shelter during the daytime. These bats are rarely found at night at these sites.

- **Feeding Roost:**

  A place where individual bats rest or feed during the night but are rarely present in the day.

- **Hibernation Roost:**

  A place where bats may be found either individually or together during the winter months. These roosts often have a constant cool temperature and high humidity.

- **Maternity Roost:**

  A place where female bats give birth and raise their young to independence.

- **Mating Roost:**

  A place where mating/copulation takes place between male and female bats. These can continue through the winter months.

- **Night Roost:**

  A place where bats rest and/or shelter during the night but will rarely be found here during the day. These can be used colonially or individually by the bats.

- **Satellite Roost:**

  These are alternative roosting sites that are found within close proximity to the main nursery colony within the maternity roost. These are used throughout the breeding season by individual or small groups of female bats.

- **Swarming Site:**

  A place where large numbers of bats come together during the latter summer months through until autumn. These sites are classed as being important mating areas.

- **Transitional/Occasional Roost:**

  A place that is used by individuals or small groups of bats for a small period of time. These are used by the bats prior to hibernation and/or shortly after hibernation.

2.2.6 **Bat Detector Survey (presence/absence survey)**

If required, the object for this survey method is to detect any bats leaving or returning to their roost sites within the surveyed features. This is achieved by undertaking dusk and dawn activity surveys under the following protocol:

- Commencing the survey fifteen minutes before sunset (dusk survey) and two hours before sunrise (dawn survey).
- Listening for any social calls at potential roost sites using bat detectors.
- Standing at different survey points around the building(s) and/or vegetation using bat detectors to hear the bat echolocation.
- The survey will attempt to witness the first bats emerging (dusk) and the bats returning (dawn) to their roosts.
- Standing at different transect points at foraging/commuting areas around the site.
- Carrying out this survey methodology for up to two hours after sunset (dusk) and up to fifteen minutes after sunrise (dawn). This will cover the emergence and re-entry of the bats at the potential roost site, for some bat species.

2.2.7 In order to comply with the required legislation, the results from the surveys will be collated to establish whether a European Protected Species (EPS) development licence will be required. If required, project appropriate species-specific compensation and mitigation measures will be devised to ensure the species remains at a favourable conservation status at the impacted site.

2.3 Surveyors Information

2.3.1 The survey was undertaken by licensed bat ecologist/s and members of the Chartered Institute of Ecology & Environmental Management (CIEEM) and Elite Ecology staff members:

Ms. Lucy Talbot: BSc (Hons), Ecologist, Accredited Agent

Miss. Katie Yeomans: MSc, Assistant Ecologist

Mr. Simon Lindqvist Radic: BSc (Hons), Assistant Ecologist

Mr. Ezra Rynjah: MSc, Assistant Ecologist

Mr. Matthew Hodgson: Ecologist, Natural England Bat Survey Licence Number: 2023-11375-CL18-BAT

Mr. Peter Royall: BSc (Hons), Assistant Ecologist

Mr. Benjamin Jones: BSc (Hons), Assistant Ecologist

Mr. Jake Whitehead: Assistant Ecologist

Mr. Alexander Dick: BSc (Hons), Assistant Ecologist

2.4 Field Surveys

2.4.1 Site Surveys

Elite Ecology have previously undertaken a Preliminary Ecological Appraisal in March of 2023, which identified **B1** as having **moderate** potential to support roosting bats and **high** potential for supporting nesting birds, **B2** as having a **low** potential for supporting roosting bats and **low** potential for supporting nesting bats, and **B3** as having a **low** potential for supporting roosting bats and **low** potential for supporting nesting birds.

2.4.2 Roost Surveys

The buildings at Dower House, Harlington were externally inspected for the presence of bats with the use of various types of equipment (including binoculars, torches, endoscopes, and ladders) in full daylight. No Internal inspection occurred due to safety concerns Subsequent activity surveys use a variety of bat detectors that include Bat Box Duet, SSF Bat2, EchoMeter Touch and the EcoObs Batcorder. The following table outlines the environmental variables from the survey visits:

Environmental variables	PEA of the site – 6th of March 2023.	Activity Survey of the Buildings – 8th of June 2023.	Activity Survey of the Buildings- 28th of July 2023. Dusk	Activity Survey of the Buildings – 10th of August 2023. Dawn
Temp Start:	9°C	18°C	21°C	16°C
Temp Finish:	9°C	15°C	19°C	14°C
Humidity Start:	70%	54%	80%	95%
Humidity Finish:	70%	60%	84%	100%
Cloud Cover Start:	90%	0%	85%	5%
Cloud Cover Finish:	90%	0%	30%	0%
Wind Speed Average:	High	Moderate	Moderate	Low
Precipitation:	None	None	None	None

3. Results

3.1 Desktop Survey Results

The ecological data search provided by GiGL revealed multiple bat and bird species within the 1km search radius of the structures at Dower House, Harlington.

3.1.1 Bats

Within the ecological data search provided by GiGL, one species of bat was revealed within the 1km search radius. This was of an unidentified bat (*Chiroptera* sp.). An accurate location of this record could not be given due to the four-figure grid reference provided by GiGL.

3.1.2 Birds

Within the ecological data set received by GiGL, twenty bird species were revealed within 1km of the survey site. The closest record to the proposed works site are of fieldfare (*Turdus pilaris*), mistle thrush (*Turdus viscivorus*), red kite (*Milvus milvus*), redwing (*Turdus iliacus*), and starling (*Sturnus vulgaris*), all which were all located approximately 175m to the south-west of the site centroid. A table with the collated bird species recorded can be found within **Appendix B**.

3.1.3 Designated Sites

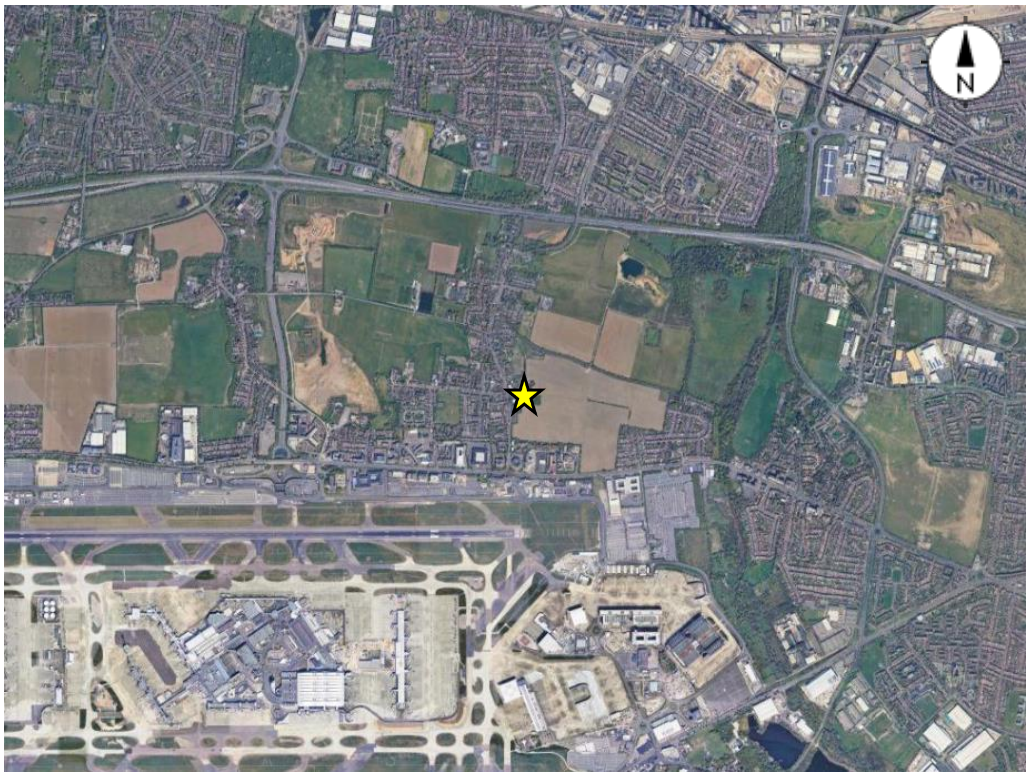
As the current proposal remains within the site boundary, it was not necessary to obtain any further information regarding both Statutory and Non-Statutory Nature Conservation Designations. This is due to the proposed works not altering any of the landscape surrounding the site.

3.2 Field Surveys

3.2.1 Habitat Description

The site is located within in an urban setting in the village of Harlington, found within the London Borough of Hillingdon. The site measures approximately 0.7ha, and contains a number of habitats. The buildings of interest themselves measure a total of approximately 470m^2. These include broadleaved scattered trees, buildings, coniferous scattered trees, fence, hard standing ground, other habitat (waste piles), recently felled broadleaved trees, scattered scrub, short ephemeral, tall ruderal, and wall. Within the wider landscape, further habitats are present. These come in the form of amenity grassland, arable land, buildings (and their associated gardens/yards), hard standing ground, hedgerows, scattered trees, standing water and woodland. Therefore, the habitats that are present in and around the site contains all of the elements that are considered to be critical in both bat and bird life cycles.

Figure 2: An aerial photograph of the surveyed site (yellow star) and some of the nearby habitats to Dower House, Harlington.



3.2.2 **Building Survey**

Dower House (B1)

External Inspection

B1 is a detached residential building. Its walls are constructed of solid brick, with some parts of the southern and eastern elevations being rendered. There is currently no roof on the majority of this building, as it was damaged by fire. However, there is a small section of clay tile roof remaining in the eastern section of the building. The building is covered by temporary roof scaffolding to protect the interior of the building from further deterioration from the weather. The doors of the building are wooden, and the windows are also wooden framed, although at the time of the survey visit the doors were smashed. A brick chimney is present on the northern elevation on the eastern wing of the building. A large crack running up the brickwork can be found on the southern elevation of the building. Several gaps under the tiles on the eastern side of the roof of the eastern wing were identified. No external bird nests were identified during the survey visit.

Internal Inspection

Internally, the walls of the building are brick. Some wattle and daub walls are also visible. The interior of the building is filled with temporary supports that are holding up the remaining timber beams of the roof. Due to the lack of roof, natural light fills the interior. The easternmost section of the east wing is largely untouched by fire damage, and within this loft space timber beams can be seen, with a bitumen felt underlay also visible. Due to the current condition of the building, the loft space was unable to be fully assessed. Within this void a blackbird (*Turdus merula*) nest was identified, although this was not active at the time of the survey. No anecdotal signs of bat activity were identified throughout the interior of the property.

Lean-to Shed (B2)

External Inspection

This building adjoins to the eastern elevation of **B1**. The southern elevation of this building is made of solid brick walls, with the eastern section is made of wooden cladding. The sloped roof of this structure falls northwards and is made of clay pan tiles. No windows or doors are present within this structure. Ivy (*Hedera helix*) is present on the southern elevation, but it is not thick enough to support roosting bats. The roof is damaged, and several broken and slipped tiles are present, providing potential roosting opportunities for bats. No external bird nests were identified during the survey visit.

Internal Inspection

The roof of the building is supported by timber beams. No roof membrane is present, and the bottoms of the tiles are exposed. Natural light enters through gaps between the tiles and through the elevations of this building that are without walls. Spider webs are present on the rafters. No evidence of roosting bats or nesting birds was identified within the interior.

Garden Shed (B3)

External Inspection

The building is an A-frame shed with plastic walls that meet to form an apex. It has a plastic window in the gable end that is smashed. No other features such as guttering, or drainpipes are present. The structure is covered in ivy (*Hedera helix*), although this would not be dense enough to support roosting bats.

Internal Inspection

Internally the plastic of the roof of supported by timber beams. Natural light enters the building as there is an absence of plastic roofing boards towards the apex of the roof. No signs of bats or nesting birds were present on the interior.

3.2.3 Summary of the Building Inspection

Due to the amount of potential ingress/egress points and suitable roosting features, the structures at Dower House, Harlington were deemed as having the following bat and bird potential:

Building	Nesting Bird Potential	Bat Roost Potential	Number of bat activity surveys required	Number of surveyors required for bat activity survey
B1	**High**	**Moderate**	2	4
B2	**Low**	**Low**	1	
B3	**Low**	**Low**	1	2

The building **B1** was **confirmed** to support nesting birds, whilst **B2** and **B3** were not confirmed to support nesting birds.

Table 1: Low/Moderate/High potential building(s) survey recommendations. The full guidance can be found in the Bat Conservation Trust Good Practice Survey Guidelines. These guidelines are what all local authorities abide by.

Bat Conservation Trust

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey[a] (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.[b]	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.[b]

[a] Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see Section 5.2.9). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

[b] Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

3.2.4 DNA Results

No eDNA was carried out for this site.

3.2.5 Activity Surveys

Three activity surveys were undertaken on the buildings on the 8th of June, the 28th of July, and the 10th of August 2023.

Activity Survey 1 (8th of June 2023):

The activity survey was undertaken at dusk with sunset being recorded at 21:19.

During this survey, two common pipistrelle (*Pipistrellus pipistrellus*) bats were identified emerging from the structure. One was identified emerging from underneath the tarpaulin on the west of **B1**, and the other was identified emerging from underneath the tarpaulin on the east of **B1**.

In addition, common pipistrelle bats were identified to be using the site for passing and foraging.

Figure 3: An aerial photograph of the surveyed buildings (red outline), the surveyor locations (yellow stars) and the common bat flight paths (dotted blue lines). Bat emergences are noted by the blue stars.

Activity Survey 2 (28th of July 2023):

The activity survey was undertaken at dusk with sunset being recorded at 21:10.

During this survey, no bats were identified emerging from the structure.

However, common pipistrelle bats were identified foraging and commuting in the area.

Figure 4: An aerial photograph of the surveyed buildings (red outline) and the surveyor locations (yellow stars).

Activity Survey 3 (10th of August 2023):

This survey was undertaken at dawn with sunrise recorded at 05:38.

During this survey, no bats were seen re-entering the building.

In addition, common pipistrelle and noctule (*Nyctalus noctula*) bats were identified using the site for commuting, foraging, and socialising.

Figure 5: An aerial photograph of the surveyed buildings (red outline) and the surveyor locations (yellow stars).

Summary

In summary, the structure has been shown to be in use as a day roost for common pipistrelle bats.

In addition to this, common pipistrelle and noctule bats were identified commuting and foraging around the site.

4. Impact Assessment

4.1 Constraints

Constraints on:	Survey Information	Equipment Used
Constraint (Yes or No):	No	No
Explanation of Constraints:	N/A	N/A
Action Taken:	N/A	N/A

4.2 Potential Impacts of the Re-development

Under the current proposals, the plans are to rebuild the listed building, and create thirteen additional residential dwellings with new access and community woodland. The potential impacts of these works have been identified as follows:

4.2.1 Designated Sites

As the proposed works are due to remain within the site boundary, the presence of any designated sites nearby is not applicable to this project. This, therefore, means that any building works would be of no detriment to the surrounding habitats and landscape.

4.2.2 Bat Roosts

Impacts	Short-term Impacts: Disturbance	Long-term Impacts: Roost Modification	Long-term Impacts: Roost Loss
Classification:	**High**	**High**	**High**
Justification:	The structure **B1** was found to support a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats.	The structure **B1** was found to support a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats.	The structure **B1** was found to support a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats.
Any further action:	Species-specific mitigation measures are required (please see **Section 5** for more information).	Species-specific mitigation measures are required (please see **Section 5** for more information).	Species-specific mitigation measures are required (please see **Section 5** for more information).

4.2.3 Bird Nests

Due to the presence of bird nests in relation to the surveyed structure, the proposed scheme of works will be of a **high** effect to the local bird populations. Please see **Section 5.2** for further recommendations.

4.2.4 **Foraging and Commuting Habitat**

It is considered that the re-development of the site would have a **negligible** effect on potential foraging and commuting habitat. The site itself offers little foraging habitat, with the adjacent land containing better opportunities for bats to use. Post development, all foraging and commuting habitats will be maintained, thus not negatively affecting the local landscape.

5. Recommendations

5.1 Bats

From the site survey, it has been established that the structure at Dower House, Harlington contains a common pipistrelle (*Pipistrellus pipistrellus*) bat day roost. In addition to this, commuting and foraging common pipistrelle and noctule (*Nyctalus noctula*) bats were also detected.

Prior to any works, a Natural England Low Impact Class Development Licence is necessary to legally close or disturb the bat roost. Natural England licences take thirty working days once all the paperwork has been completed and submitted. As part of the licence, post-monitoring surveys will be required in subsequent years to assess whether any bats are using the compensatory measures installed around the site. The Natural England Low Impact Class Development Licence can be applied for and undertaken at any time of the year.

Works on the structure should only take place in conditions that are deemed suitable for bat activity (temperature above 7^{o}C and avoiding heavy rain). This will reduce any impacts on bats should they be found during the work.

A licenced ecologist is required to undertake soft demolition by accompanying building contractors in inspecting the structure by hand. This will ensure that no hibernating bats are harmed by the works.

One 1FS Schwegler Large Colony Bat Boxes or similar (one per species) will be required to be installed on the morning of the commencement of the bat inspection. This will need to be situated on a nearby tree so that any bats found can be translocated to this feature and enable the works to commence without impacting upon the bats.

It is recommended that the existing access points are retained. If this is not possible, then two Integrated Eco Bat Boxes (one for each emergence point on **B1**) must be implemented into the new development. Placements of these can be seen in **Figure 6**. These can be purchased by contacting admin@eliteecology.co.uk, and should be placed as close to the existing bat access points as possible.

Artificial lighting should be avoided around compensatory roosting features. If artificial lighting is required, a sensitive lighting plan with sensored lights triggered by large bodies should be incorporated.

No breathable roofing membrane is to be used on the structure. This is due to all breathable membranes containing features which lead to the bat's demise.

Figure 6: Proposed elevation plans of the rebuild at Dower House, Harlington with the locations of Integrated Eco Bat Boxes shown (blue shape). Please note these shapes are not to scale.

5.2 Birds

From the survey visit, **B1** was found to support nesting birds.

All works on the structures must be undertaken outside of the bird breeding season (March to August, inclusive). If these features are required to be altered during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than twenty-four hours before this process commences. This is to ensure that no active nest site is illegally destroyed, due to the protection afforded to **all** active bird nests under the Wildlife and Countryside Act 1981. If an active nest is found by a site inspection, an exclusion zone around the nest will be necessary to preserve this feature until the chicks have fledged the nest.

To compensate for the loss of the blackbird (*Turdus merula*) nests, it will be necessary to incorporate Bird Boxes, such as an FSC Blackbird Nest Box into the proposed scheme of works. This will give these specimens the necessary internal opportunities to nest at the site.

In addition to this, a variety of bird boxes can be installed around the site to enhance the nesting opportunities for a variety of species within the local landscape. It should incorporate at least one of each of the following options:

- Apex Bird Box
- Apex Robin Box
- Large Bird Nest Box
- Blue Tit 25mm entrances (bark box)
- House Sparrow/Great Tit bird boxes (bark box)

These boxes can be purchased by contacting admin@eliteecology.co.uk. Bird boxes installed on buildings should face between north and east to avoid the strong sunlight and wet winds. Boxes installed on trees can face any direction as the trees will provide shelter however the entrance must be kept clear of branches and vegetation. All bird enhancements must be situated in a way that prevents access to predators such as cats.

Please Note: Due to the fact that Dower House itself is a listed building, it is inappropriate to install Bird Boxes in the rebuild. Instead, these could be installed on nearby trees or any of the thirteen new residential dwellings.

6. Summary

6.1 Bat Presence/Absence

From the survey visit undertaken on the site, it can be concluded that the structure **B1** contains a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats. **B2** and **B3** were not found to support roosts of any type. In addition to this, commuting and foraging common pipistrelle (*Pipistrellus pipistrellus*) and noctule (*Nyctalus noctula*) bats are present in the local landscape.

6.2 Bird Presence/Absence

From the survey visit undertaken on the site, it can be concluded that the surveyed structures contain nesting birds. In addition, the surrounding landscape provides all of the necessary habitat elements that birds require.

6.3 Ecological Value of Building Units

The ecological value of the structure has been deemed as **high** to bats due to the presence of a day roost of common pipistrelle (*Pipistrellus pipistrellus*) bats.

The ecological value of the buildings to birds has been deemed **high** due to **B1** supporting nests of blackbird (*Turdus merula*).

6.4 Recommendations

The recommendations for Dower House, Harlington can be summarised as follows (please refer to **Section 5 – Recommendations** for a more in-depth description):

- Apply for a Natural England Development Licence to legally carry out the works.
- At the start of works, site supervision by a licenced bat ecologist in accordance with the Natural England Development Licence will be required.
- Install bat compensatory features on the site in accordance with **Section 5 Recommendations**.
- Artificial lighting should be avoided around compensatory roosting features.
- No breathable roofing membrane is to be used on the structure.
- No works can be undertaken during the bird breeding season of March to August (inclusive), unless the structure has been inspected by a suitably qualified ecologist no more than twenty-four hours prior to the commencement of works.
- Incorporate Bird Boxes, such as an FSC Blackbird Nest Box into the proposed scheme of works to compensate for the loss of blackbird (*Turdus merula*) nests.
- **Optional:** Install a variety of bird boxes around the site post development to enhance the site for the local bird populations. Some suitable examples are shown in **Section 5**.

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8. Appendices

Appendix A: Site Plans

Appendix B: Eco Data Map and tables

Appendix C: Artificial Light and Bats

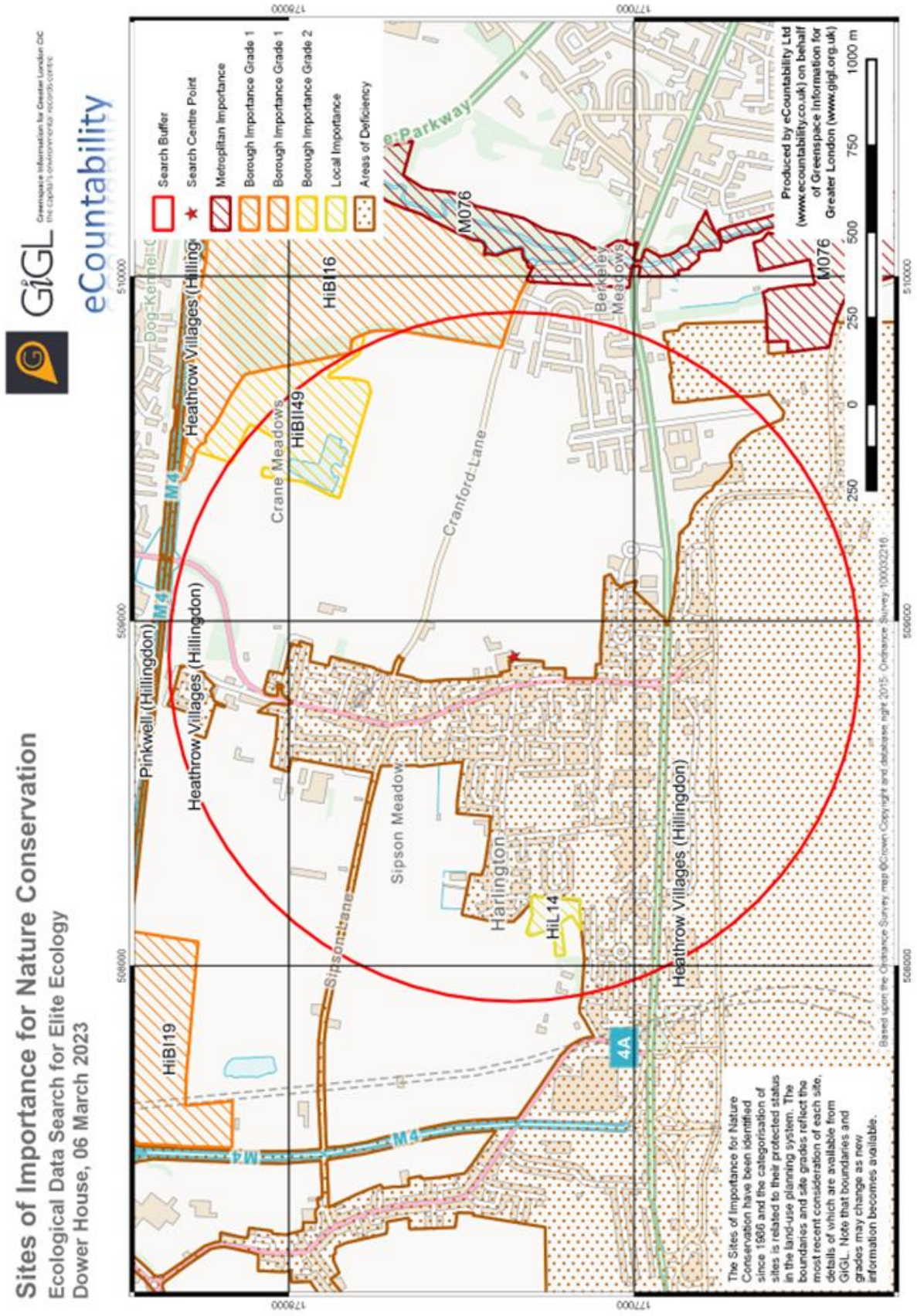
Appendix D: Photographic Records

Appendix E: The Annual Bat Year (BCT)

Appendix F: Legislation

Appendix A: Site Plans

Appendix B: The Ecological Data Search Maps and Tables



Birds	
Common Name	**Latin Name**
Brambling	*Fringilla montifringilla*
Dunnock	*Prunella modularis*
Fieldfare	*Turdus pilaris*
Grey Wagtail	*Motacilla cinerea*
Hen Harrier	*Circus cyaneus*
House Martin	*Delichon urbicum*
House Sparrow	*Passer domesticus*
Lapwing	*Vanellus vanellus*
Linnet	*Linaria cannabina*
Mistle Thrush	*Turdus viscivorus*
Red Kite	*Milvus milvus*
Redwing	*Turdus iliacus*
Reed Bunting	*Emberiza schoeniclus*
Ring-necked Parakeet	*Psittacula krameri*
Short-eared Owl	*Asio flammeus*
Skylark	*Alauda arvensis*
Starling	*Sturnus vulgaris*
Swift	*Apus apus*
Whinchat	*Saxicola rubetra*
Yellow Wagtail	*Motacilla flava*

Appendix C: Artificial Lighting and Bats

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotid bats (Myotis spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

- To introduce lighting curfews or use of PIR sensors.

  Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

- To consider no lighting solutions where possible.

  Options such as white lining, good signage and LED cats eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

- To use only high pressure sodium or warm white LED lamps where possible.

  High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

- To minimise the spread of light.

  The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

- To consider the height of the lighting column.

  While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

- To avoid reflective surfaces below lights.

  The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

Appendix D: Photographic Records

Plate 1: Image showing the hard standing ground at the west of the site and the western elevation of **B1**.

Plate 2: Photograph showing the eastern elevation of **B1**.

Plate 3: Image showing the state of the roof of **B1**.

Plate 4: Image showing the loft area of the eastern wing.

Plate 5: Image of the bird nest found within **B1**.

Plate 6: Image showing a crack in the wall of the southern elevation of **B1**.

Plate 7: Image showing **B2**.

Plate 8: Image showing the exterior of **B3**.

Plate 9: Image showing the interior of **B3**.

Appendix E: The Annual Bat Year (BCT)

A Year in the Life of a Bat			
January		**February**	
	Hibernating; using up fat reserves.		Still hibernating; few fat reserves left.
March		**April**	
	Some activity; occasional bat seen feeding.		Awake and feeding at night.
May		**June**	
	Females looking for nursery sites.		Young born, usually only one.
July		**August**	
	Young still suckling.		Young start catching insects; females leave nursery to find males.
September		**October**	
	Mating season begins; start building fat reserves for hibernation.		Search for suitable hibernation site.
November		**December**	
	Hibernation begins although still some activity in warm weather.		Hibernating.

Appendix F: Legislation and Policy

All species of bat are fully protected under a variety of domestic, European and international legislation and conventions. These include:

- Bern Convention (Appendix II)
- Bonn Convention (Appendix II)
- Conservation Regulations (Northern Ireland) 1995
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
- Countryside Rights of Way Act 2000
- Eurobats Agreement
- Habitats Directive (Annexes IV and II)
- Habitats Regulations 1994 (as amended) Scotland
- NERC Act 2006
- Wildlife and Countryside Act 1981 (as amended)
- Wild Mammals Protection Act

In addition to this, some species have additional protection by being listed on the UK Biodiversity Action Plan (UKBAP).

The legislation afforded to bats makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which protects birds, nests, eggs and nestlings from harm. In addition to this, some rarer species, such as barn owls are afforded extra protection.

National Planning Policy Framework, Section 15:

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives. The latest National Planning Policy Framework was updated in February 2019, with the section in relation to conserving the natural environment being located within section 15.

Section 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

Biodiversity 2020:

This sets out to halt overall biodiversity loss and support healthy well-functioning ecosystems by establishing coherent ecological networks, with more and better places for nature, to the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

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The survey results purport the current status of the site and its potential for protected species utilisation at the time of surveying. It should not be viewed as a complete list of the possible flora and fauna species that could be using the site at different times of the year.

Elite Ecology has been provided with full payment for this report and thus the product has been released to the client(s) for the purpose of their planning application. If any part of the report is lost or altered without the written permission of Elite Ecology, then the entire report becomes invalid. Due to the potential for continual change within the natural world, this report is valid for **2 years only** from the date of the last survey visit. If this report is submitted after the 2 year deadline, then a further updated inspection will be required to ascertain whether the site remains in the same condition as it was when initially inspected.

No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.